

## DIFFERENTIAL AMPLIFIER

### BACKGROUND OF THE INVENTION

The invention relates to devices to amplify electrical signals and more  
5 particularly, to differential amplifiers.

It is known differential amplifiers which are balance-paralleled symmetric amplifiers as described in Operating Devices by G.S.Ostapenko, p.305 – 306, Radio and Communication, 1989..

A deficiency of balance-paralleled differential amplifier is in symmetric  
10 infringement as a result even of a slight difference of the amplifying element parameters.

An object of the invention is a creation of differential amplifier which is symmetric with regard to the power source, the balance of which does not depend on a parameter difference of amplifying elements.

15 The object is obtained by differential amplifier is made under a circuit of the series balance.

### SUMMARY OF THE INVENTION

The execution of differential amplifier under a circuit of the series balance differs it from known differential amplifiers that determines correspondence of  
20 the preferred technical embodiment for correspondence to a criterion “nonobviousness”.

Checking the preferred technical embodiment for correspondence to a criterion “essential distinctions” was compared its distinguish features to ones of known technical embodiments and which showed that the execution of  
25 differential amplifier under a circuit of the series balance in known technical embodiment is lack that lets to draw a conclusion about correspondence to a criterion “essential distinctions”.

Correspondence of the preferred technical embodiment to a criterion “positive effect” is determined in that the execution of differential amplifier

under a circuit of the series balance ensures its symmetry with regard to the power source and the balance of differential amplifier does not depend on a parameter difference of amplifying elements.

### BRIEF DESCRIPTION OF THE DRAWING

5        The invention is schematically illustrated by way of example in the accompanying drawing in which:

FIG. is one of variation to execute differential amplifier of the series balance.

### DESCRIPTION OF A PREFERRED EMBODIMENT

10        The differential amplifier consists: 1<sup>st</sup> and 2<sup>nd</sup> field-effect transistors 1 and 2 of different structure, shutters of which are 1<sup>st</sup> and 2<sup>nd</sup> inputs 3 and 4 and sources are connected with a coupling resistor 5, and also consisting 1<sup>st</sup> and 2<sup>nd</sup> terminating resistors 6 and 7, ones of leads of which are connected up to the corresponding poles of the power source and the others are opposite phase  
15        outputs 8 and 9 of differential amplifier.

The device functions as follows:

The load current flows through consistently-connected transistors 1 and 2, a coupling resistor 5 and load resistors 6 and 7, as result of that is obtained the balance of a circuit of differential amplifier and the absolute symmetry with  
20        regard to poles of the power source for the input and output of differential amplifier.

The preferred differential amplifier in comparison with known of ones by executing it under a circuit of the series balance lets to obtain the absolute symmetry of differential amplifier with regard to the power source and the  
25        balance does not depend on a parameter difference of amplifying elements.